



SEQUENCE LISTING

<110> Rybak, Susanna M.
Newton, Dianne L.
Goldenberg, David M.
The Government of the United States of America
as represented by The Secretary of the
Department of Health and Human Services

<120> Immunotoxins Directed Against Malignant Cells

<130> 015280-325200US

<140> US 09/918,887

<141> 2001-07-30

<150> US 60/046,895

<151> 1997-05-02

<150> US 09/071,672

<151> 1998-05-01

<160> 4

<170> PatentIn Ver. 2.1

<210> 1

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:RNase A derived from
Rana pipiens, "onc protein"

<220>

<221> MOD_RES

<222> (1)

<223> Xaa = Glu or pyroglutamic acid

<400> 1

Xaa	Asp	Trp	Leu	Thr	Phe	Gln	Lys	Lys	His	Ile	Thr	Asn	Thr	Arg	Asp
1				5					10					15	

Val	Asp	Cys	Asp	Asn	Ile	Met	Ser	Thr	Asn	Leu	Phe	His	Cys	Lys	Asp
			20					25					30		

Lys	Asn	Thr	Phe	Ile	Tyr	Ser	Arg	Pro	Glu	Pro	Val	Lys	Ala	Ile	Cys
			35				40					45			

Lys	Gly	Ile	Ile	Ala	Ser	Lys	Asn	Val	Leu	Thr	Thr	Ser	Glu	Phe	Tyr
	50					55					60				

Leu	Ser	Asp	Cys	Asn	Val	Thr	Ser	Arg	Pro	Cys	Lys	Tyr	Lys	Leu	Lys
65					70					75				80	

Lys	Ser	Thr	Asn	Lys	Phe	Cys	Val	Thr	Cys	Glu	Asn	Gln	Ala	Pro	Val
				85					90					95	

His	Phe	Val	Gly	Val	Gly	Ser	Cys
							100

<210> 2
 <211> 249
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:nucleic acid encoding
 "onc protein"

<400> 2

gatgttgatt	gtgataatat	catgtcaaca	aacttgttcc	actgcaagga	caagaacact	60
tttatctatt	cacgtcctga	gccagtgaag	gccatctgta	aaggaattat	agcctccaaa	120
aatgtgttaa	ctacctctga	gttttatctc	tctgattgca	atgtaacaag	caggccttgc	180
aagtataaat	taaagaaatc	aactaataaa	ttttgtgtaa	cttgtgaaaa	tcaggcacca	240
gttcatttt						249

<210> 3
 <211> 83
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:"onc protein", positions
 16-98 of SEQ ID NO:1

<400> 3

Asp	Val	Asp	Cys	Asp	Asn	Ile	Met	Ser	Thr	Asn	Leu	Phe	His	Cys	Lys	
1				5					10					15		
Asp	Lys	Asn	Thr	Phe	Ile	Tyr	Ser	Arg	Pro	Glu	Pro	Val	Lys	Ala	Ile	
			20					25					30			
Cys	Lys	Gly	Ile	Ile	Ala	Ser	Lys	Asn	Val	Leu	Thr	Thr	Ser	Glu	Phe	
		35					40					45				
Tyr	Leu	Ser	Asp	Cys	Asn	Val	Thr	Ser	Arg	Pro	Cys	Lys	Tyr	Lys	Leu	
	50					55					60					
Lys	Lys	Ser	Thr	Asn	Lys	Phe	Cys	Val	Thr	Cys	Glu	Asn	Gln	Ala	Pro	
65					70					75				80		
Val	His	Phe														

<210> 4
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:carboxy terminal
 sequence of RFB4-PE35KDEL and LL2-PE38KDEL chimeric
 immunotoxins with Pseudomonas exotoxin A (PE) modified
 by KDEL endoplasmic reticulum retention sequence

<400> 4

Lys Asp Glu Leu
 1